**SR8 CROWN WHEEL AND PINION SETUP**

**Setup Information**   
Pinion Depth 109.90mm, this may vary depending on which CWP is used. The Pinion Depth should be stamped on the CWP.  
Pinion Backlash 0.004”- 0.008”  
Bearing Preload 12-15Nm

**Types of Crown wheel and pinions used in SR8 Gearbox’s:**   
Non-Hypoid  
Gleason Hypoid  
Klingenberg Hypoid

**Basic Setup Procedure**Before replacing the CWP measure the current setup. Measure the Pinion Backlash and Bearing Preload. This will give you an approximate gauge on whether further adjustments are required. Do this when replacing a CWP, like for like i.e. replacing a Gleason with a Gleason. The setup will be slightly quicker. However if you are replacing a Gleason with a Klingenberg or visa-versa, a pre replacement setup check is not required. The backlash and bearing preload will definitely require adjusting.



Before fitting the new Pinion, take several measurements of the Pinion gear to gain an average. Use the image above for an example. Do not include the Pinion Spacer when measuring.

Press the new bearings onto the Pinion Shaft and fit the Pinion Shaft along with the Retaining Plate, Gear Hubs and Thrust Washers and tighten the Main Nut.

You will require a Setup Tool and a Depth Gauge to measure the Pinion Depth from the centre of the Differential. Use the images below as an example. 



By turning the pinion carry out several measurements for accuracy.

Add the pinion depth measurement to the initial pinion gear measurement. This will give you the current Pinion Depth.

**Example:**   
49.40mm (Pinion Gear) + 60.50 (Measured Depth) = 109.90mm

The example I have used is one that does not require any adjustments. To determine the correct Pinion Depth, adjustments to the Pinion Spacer will be required. You may need to grind the Pinion Space to achieve the Pinion Depth figure. You may also use a shim to achieve the corrected Pinion Depth figure however this is not ideal, it is far better to use a larger spacer and grind it to size.

Replace the Crown Wheel and ensure 648 Loctite is used and the Bolts are torqued to 120Nm. Lock wire must also be used.

Use Engineers Blue and paint one half of the Crown Wheel. Reassemble and simulate turning of the engine. You will need to go forwards and backward several times to gain a clear reading. Once done take the Crown Wheel out and inspect the Engineers Blue, this will show the gear mesh. Good gear mesh will show marks on the centre of the tooth on drive and overrun. This will be visible once the Pinion Depth and the Bearing Preload is correct.

**Bearing Preload**  
The Bearing Preload needs to be between 12-15Nm. This should be measured using a torque gauge, not a torque wrench. By adding shims to the gold plate side, this will increase Bearing Preload and can also decrease the Pinion Backlash. By adding shims to the silver plate side, this will increase Bearing Preload and increase Pinion Backlash. Be aware that for every shim you take out or add, may change both parameters so take your time to understand what is happening to the Crown Wheel when adding/removing shims.

For any further questions please feel free to contact myself.

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